

17  
**PUBLIC HEALTH ACT**

(11 & 12 Vict. Cap. 63.)

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**REPORT**

TO THE

**GENERAL BOARD OF HEALTH**

ON TWO

**PRELIMINARY INQUIRIES**

INTO THE SEWERAGE, DRAINAGE, AND SUPPLY OF  
WATER, AND THE SANITARY CONDITION  
OF THE INHABITANTS

OF THE TOWNSHIPS OF

**BURTON EXTRA**

AND OF

**HORNINGLOW,**

IN THE PARISH OF BURTON-UPON-TRENT.

By **WILLIAM LEE, Esq., C.E.,**  
SUPERINTENDING INSPECTOR.



LONDON:

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1853.

## NOTIFICATION.

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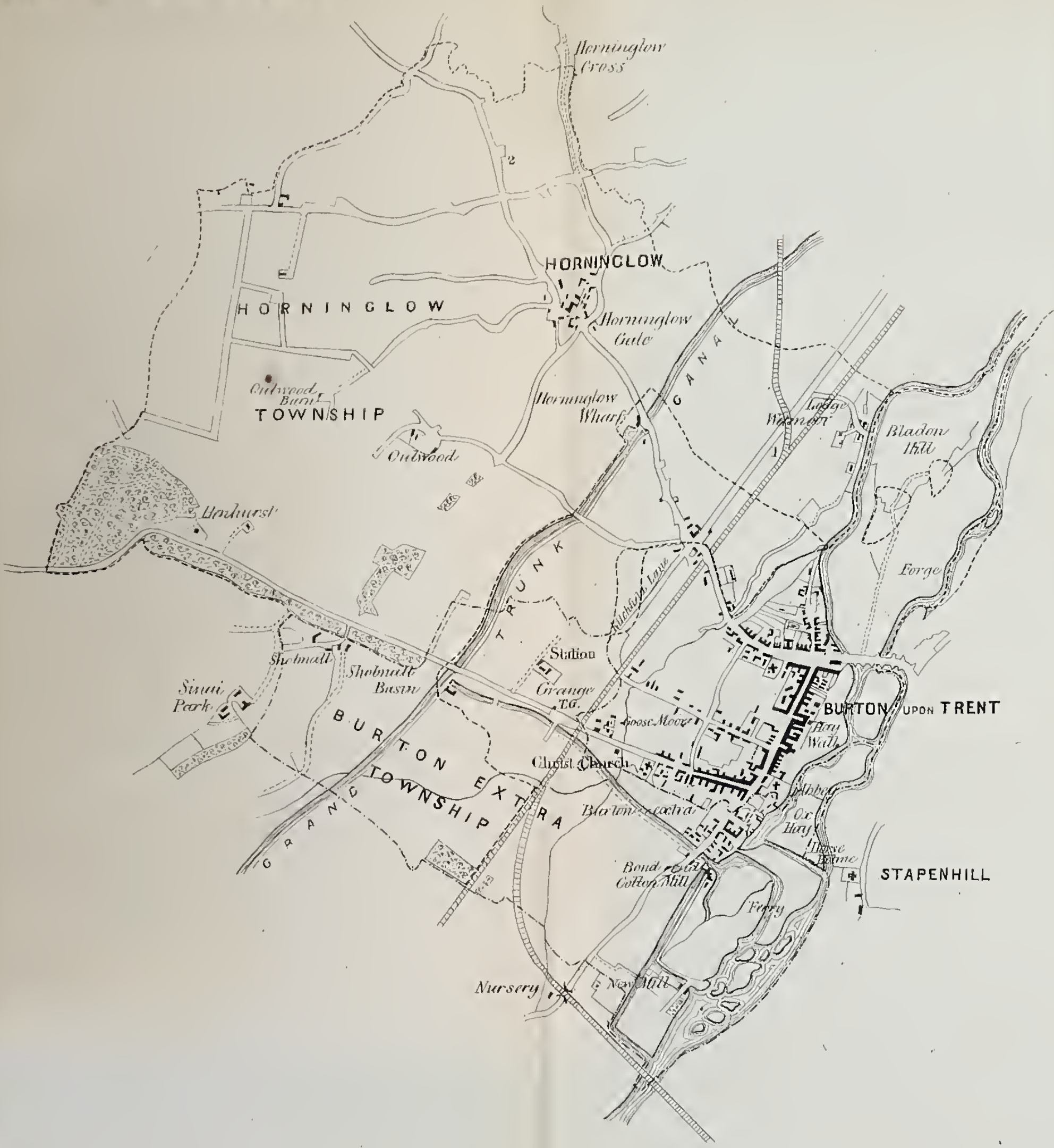
THE General Board of Health hereby give notice, in terms of section 9 of the Public Health Act, that on or before the 10th day of March next, being a period of not less than one month from the date of the publication and deposit hereof, written statements may be forwarded to the Board with respect to any matter contained in or omitted from the accompanying Report on two several Preliminary Inquiries into the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Townships of BURTON EXTRA and of HORNINGLOW, both in the Parish of Burton-upon-Trent ; or with respect to any amendment to be proposed therein.

By order of the Board,

C. MACAULAY, *Secretary.*

*Whitehall, 20th January 1854.*

BURTON UPON TRENT.



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## PUBLIC HEALTH ACT (11 &amp; 12 Vict. c. 63.)

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*Report to the General Board of Health on two several Preliminary Inquiries into the Sewerage, Drainage, and Supplies of Water, and the Sanitary Condition of the Inhabitants of the Townships of BURTON EXTRA and of HORNINGLOW, both in the Parish of Burton-upon-Trent.*  
By WILLIAM LEE, Esq., C.E., Superintending Inspector.

7, Duke-street, Westminster,  
1st August 1853.

MY LORDS AND GENTLEMEN,

EARLY in the present year two petitions were presented to you from Burton Extra and Horninglow, praying for preliminary inquiries with a view to the application of the Public Health Act to those places.

In the month of March you were pleased to direct that I should make preliminary inquiries, and report to you upon the sanitary condition of the inhabitants of both those places, in accordance with the prayer of the petitions.

Public notice was accordingly given, and the inquiry at Burton Extra was commenced on the 18th day of May last, and that at Horninglow on the 20th of the same month.

Under ordinary circumstances it would have been my duty to prepare a separate and distinct report upon each of these places; but their contiguity to each other and to the township of Burton-upon-Trent has induced me to depart from the usual course. I have endeavoured, however, to keep sufficiently distinct the considerations upon which my conclusions are based.

THE PETITIONS.—The petitions are in the usual form. The one from Burton Extra is signed by 52 persons, and that from Horninglow by 64 persons.

Mr. Thomas Gorton, assistant overseer, certified that the number of rated inhabitants in Burton Extra was 333.

Mr. John Walker, assistant overseer, certified that the number of rated inhabitants in Horninglow was 280.

It was alleged that some misrepresentation had been

resorted to at Horninglow, and that the petition was not valid; but the allegation was afterward withdrawn. I felt it my duty to ascertain, and am able to state that both the petitions are valid.

DESCRIPTION.—The town of Burton stands upon the west bank of the river Trent, which here divides the counties of Derby and Stafford. The area of the township of Burton-upon-Trent is very inconsiderable. The township of Burton Extra adjoins it on the south side, and the township of Horninglow on the north and north-west. Nearly the whole population of Burton Extra is actually within the town of Burton; and the same may be said of more than half the population of Horninglow. It is in the direction of the railway station and of Horninglow that the town of Burton-upon-Trent is chiefly extending.

The village of Horninglow is quite distinct, and stands upon a hill about a mile north-west of the town.

The whole town of Burton, including the inhabited part of Burton Extra and part of Horninglow, is very little above the level of the river Trent, and is very subject to floods. The natural drainage of the whole town area is therefore very defective. The agricultural part of the township of Horninglow, west of the canal, consists of about four square miles of land at an altitude of from one to two hundred feet above the town.

POPULATION, NUMBER OF HOUSES, &c.—According to the census returns the following is a correct account of the population, showing the decennial increase from 1801 to the present time. I have included the township of Burton-upon-Trent, so that your Honourable Board may judge of the relative importance of the townships under inquiry.

Township.	Acreage of Parish,	Houses in 1851.	Population in					
			1801.	1811.	1821.	1831.	1841.	1851.
Burton-upon-Trent	6,580	1,364	3,679	3,979	4,114	4,399	4,863	6,374
Burton Extra - -		257	716	872	910	910	1,193	1,289
Horninglow - -		155	272	297	341	391	852	815
Totals - - -	6,580	1,776	4,667	5,148	5,365	5,700	6,908	8,478

The following classification of houses I have received from Wm. Coxon, Esq., the clerk to the guardians. It is, I believe, correct down to July of the present year:—



## CLASSIFICATION OF HOUSES.

Annual rateable Value.	Number of Houses in Burton Extra.	Number of Houses in Horninglow.
Under £2 - - -	3	2
£ 2 and under £ 3	10	23
3        „        4	20	11
4        „        5	87	38
5        „        6	55	16
6        „        6½	14	13
6½      „        7	13	7
7        „        8	7	17
8        „        9	7	7
9        „        10	5	3
10      „        15	31	15
15      „        20	17	5
20      „        30	16	8
30      „        40	5	1
40      „        50	4	0
50      „        60	5	1
60 and upwards	9	0
Totals - - -	308	167

The annual rateable value of the buildings in Burton Extra is 3,291*l.* 7*s.* 2*d.*, and of land 2,072*l.* 2*s.*; making a total of 5,363*l.* 9*s.* 2*d.*

The annual rateable value of buildings in Horninglow is 1,371*l.* 19*s.*; canal, railways, and wharfages, 1,673*l.* 3*s.*; and of land, 3,202*l.* 10*s.* Total, 6,742*l.* 12*s.*

TRADE AVOCATIONS.—The principal trade of Burton-upon-Trent is brewing. It appears from the medical evidence that cases of *delirium tremens* are common among the workmen, and it cannot be doubted therefore that, so far as the habit of excessive drinking is incidental to the trade of the town, it must be prejudicial to the health of the inhabitants. Even where the habit is not so inveterate as to produce the fearful disease above mentioned, it would tend to an inflammatory state of the constitution. The mischief would not be confined to the adult population, but would be transmitted to their offspring, and would be apparent in the statistics of infantile deaths.

I have thought it right to allude to this, because the deaths due to such causes would not come within the con-

trol of the Public Health Act; yet they increase the general rates of mortality, and are clearly preventible.

Another observation which I think it right to make in this place is, that the decomposing refuse from breweries is necessarily more offensive and injurious than that from most other trade operations. Efficient drainage therefore, public and private, is of the utmost importance to a town where the brewing of beer is the staple manufacture.

MINUTES OF PERSONAL INSPECTION.—During the inspection of Burton Extra I was accompanied by the following inhabitants, &c.: Mr. George Greaves, surgeon; Mr. Henry James Meakin, surveyor of highways; Mr. James Ordish, Poor Law guardian; Mr. Ley Brooke, gentleman, overseer of the poor; Mr. Oliver T. Brown, gentleman; Mr. Francis Meakin, brewer; Mr. Edward Harris, brewer; Mr. John Ward, nail manufacturer; Mr. William Dalton, hatter; Mr. George Meakin, brewer; Mr. Henry Whitehead, land surveyor; Mr. William Wyllie, brewer; Mr. George Keates, builder; and other inhabitants. The following are from the minutes made at the time:—

18th May 1853.

*Fleet-street.*—Property of the executors of the late Mrs. Keats. Foul privies and water-well within 10 yards of them.

Over the wall, on John Richardson's property, the pigsty contains a large quantity of stagnant liquid filth.

In Keats' yard the pigsty is within 6 yards of the water-well.

Wood's property consists of 11 houses and 2 privies. There is no pavement, but a narrow brick footpath. The privies are in a most filthy condition, and without ash-pits.

Mr. Edwin Hodgson, nearly new property. Very foul privy-hole. The sewer in the street is much complained of. Mr. F. Dalton says the stench is very bad from the grates.

Nearly all the people have tubs to catch rain water. Many houses have two.

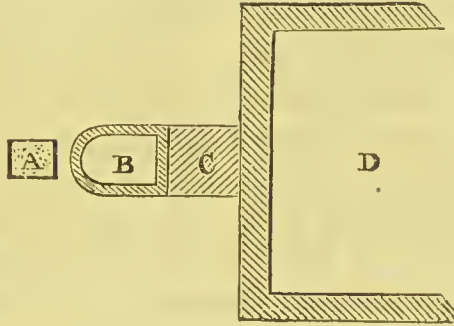
*Stephen Rogers* says,—

“We have no drainage away from the premises. We have a sort of sump or well for the drainage, and it does not always go away. We have turned it into the street, but they will not have it. It was a water-well, but is now a cesspool. It is my own property.”

It may be 5 or 6 yards deep. Pump-well is about 7 yards off, and is about 5 yards deep. Privy has an open hole about 7 by 6 feet, and about 2 feet below the general

surface. The water in the pump-well of the next yard is close to this privy-hole, and cannot be used. It is about 4 yards from the above filth-hole, and about 5 yards from the privy on Mr. Bacon's premises. There can be no doubt that the well is polluted.

The following diagram shows the condition of the appurtenances of the property belonging to the Trustees of the Baptist Chapel:—



- A. is the yard sink for drainage.
- B. The pump trough.
- C. The pump for water supply.
- D. An open privy cesspool.

The well, however, is said to be about four yards from the privy.

Executors of George Keates. Eleven nearly new houses. Back premises only about 9 feet wide. Pig tubs and water tubs adjoining. Foul privies.

*Lichfield-street.*—White-lion-yard. A bone-yard complained of by Mr. Wylie. Examined the premises. There is no stench now, but it is said at times to be unbearable. The ashes and refuse of the privy piled up about 5 feet high against two houses.

*Park-street.*—Ordish, Brookes, and others' property. Privy stench horrible. The liquid drains out, and runs over the surface. H. Murphy says it runs into the ash-grate in his house, and they cannot eat a bit of victuals at times.

Henry Chamberlain's wife complains much of the grate in the same yard, close to her door. She says it smells awful, and in summer time they often have to put lime in.

The sewer in Park-street is very bad. The boundary of Burton and Burton Extra goes down the centre of the street, but the drain is in Burton. It is below the level of the sewer it drains into.

John Richardson, Esq., property. Privy-hole has liquid about 4 yards from the pump, and close to the pump is a stagnant channel.

In the next yard is quite a similar arrangement.

Corn warehouse, occupied by Haynes. Most filthy pig-



sties and privy-hole, with great stench. The dead carcasses of a rabbit, a dog, and a duck, were floating in the hole.

The inspection at Horninglow was on the 20th, and was chiefly confined to the village. I was accompanied by the following persons interested in the inquiry:—Abraham Bass, Esq., solicitor; Mr. Samuel Turner, guardian and overseer of the poor, and surveyor of highways; Mr. George Greaves, surgeon; Mr. John Upton; Mr. Ralph Bennett; Mr. Richard Tunley; Mr. John Marston, brewer; Mr. William Laverock, farmer; and Mr. Charles Riley.

The following are the minutes made at the time:—

*20th May.*

Below Mr. Marston's brewery, in a field, there is a large OPEN cesspool, 21 by 57 feet, into which all the drainage above enters. It is used below for irrigation by open gutters, and has produced disease. It killed some cattle, and caused a malignant fever, of which some persons died. That is about 12 months since. The stench could then be smelt strongly on the road two fields distant. The difference now is that it does not accumulate. The sluice is not put down, but the sewage goes at once to the land, and there has been no disease since. It is found to produce large crops of grass.

There is a very unhealthy row of 7 cottages belonging to the Marquis of Anglesea, with a foul stagnant channel near them in the back premises, containing the drainage of a cowhouse and other refuse.

*Thomas Harlow* lives in one of these houses, and says,—

“I have lived in it three months. I lived before with my father in the same row. I have not had very good health. I do not know what has been amiss. I have been unwell since about a month before Christmas. My pains were on each side. I was confined to bed for a good deal, but not all the time. I have gone to work before I was fit to do so, and am not so stout now by a good deal. At the time when I began to be sick I was working for Mr. Greaves, at the farm. I had not been doing anything I was not accustomed to do. I am a sober man, and am married. I have been married ten months. I was off work three months altogether, and then worked a few hours in the middle of the day. My wages last summer were 2s. per day, and I was able to get good food. I am 24 years of age.”

Mr. *Greaves*, surgeon, said that he visited the man, and that his complaint was continued fever, which he attributed to the local cause in this neighbourhood, namely, inefficient drainage, &c.

There were many other cases of fever in the same row, and in other houses.

At the end of the row is a pump which was formerly public, and now supplies all the houses round.

Mr. William Laverock, farmer. Examined his farmyard from which the liquid is now draining away to the road, and is offensive to the eye and nose.

Mr. Smith's property, below the canal; drainage bad, privy stench from the vault or cesspool. On the west side of the turnpike-road, south of the canal, there is an abominable open ditch, much complained of.

RECENT APPLICATION TO PARLIAMENT.—Before entering upon the evidence given at the inquiry, I think it right to remind your Honourable Board that a Bill was introduced during the present session of Parliament, and has now passed into a law, for improving and regulating the town of Burton-upon-Trent. The limits of the Act include all the town portions of Burton-upon-Trent, Burton Extra, and Horninglow, but exclude the village of Horninglow; and, as far as practicable, the land in both these townships. It appears from the evidence given before me that the interests of Burton Extra and Horninglow are materially affected, not only as to the parts included within the limits, but also as to the parts excluded; and it was stated by the advocates of the Bill, that a feeling of opposition to the Bill influenced considerably the petitions for the application of the Public Health Act. Whatever may have been the opinions of the petitioners, however, the evidence shows that grievous sanitary evils do exist, both in Burton Extra and in Horninglow; and, it cannot be doubted, also in Burton-upon-Trent.

Having reported to your Honourable Board upon the Bill while it was before Parliament, I need not here consider its provisions. It may be well, however, to state that it constitutes a body of Commissioners with extensive and useful powers of local improvement, some of which powers—very desirable—are not contained in the Public Health Act. It appears that the Act is defective in two important particulars:—there is no power to construct waterworks for the general supply of the inhabitants; and the Public Health Act is not incorporated.

There was previously a local Act for paving, &c., but it did not extend to Burton Extra or to Horninglow.

It was necessary to state so much to enable your Honourable Board fully to appreciate the evidence.

DISEASE AND MORTALITY.—Under this head of my report I shall quote the evidence of one of the medical practitioners, who has had a long experience in the town; also the evidence



of one of the inhabitants of Horninglow ; and shall then add a few remarks upon a table of mortality which I have computed from a return prepared by Mr. Coxon, the Superintendent Registrar of the district.

George Greaves, Esq., examined, said,—

“I am a surgeon residing in Burton-on-Trent, but practising in Burton Extra and Horninglow as well. I have been in practice here altogether more than 20 years, and am a native of the town. I am well acquainted with its sanitary condition.

“The town has been much subject to epidemic disease. I was in practice during the first visitation of the cholera. There were cases of cholera in Burton then, and I know that all attacked died. I believe 8 or 10. Influenza is a frequent disease here in an epidemic form, and is prevailing at this moment. Scarlet fever has been often epidemic, and has been virulent and fatal. Small-pox has been epidemic four or five times within the last 20 years. The deaths were about in the usual proportion. Typhus, typhoid, and the lower forms of fever have been with us for many years. I have not known the town free for the last five years until just now ; and I cannot explain its cessation, except from the floods which washed some of the sewers out.

“I think the disease and mortality in Burton is above the average, but I should like to couple with that, that the habits of the men are such as to expose them to active disease, resulting from the trade of the town. We have a great deal of *delirium tremens* here, to an extent that you would scarcely believe. The men drink large quantities, but do not eat much. I do not think any of the fevers would be induced by beer drinking ; but the constitutions of the children become affected by their parents ; and when fever is developed in such persons, it assumes a more active form. I have seen worse cases of fever here than in any places with which I am acquainted ; and I have had experience in St. Giles's and Wapping, in London, where there is much drinking.

“Of course one of the great causes of disease is the want of proper drainage and cleansing, and the habits of the people ; and no doubt that with better drainage and cleansing there would be very much less of such disease.

“I have known many instances in Burton and in Horninglow, where the water-wells have been quite polluted by percolations from privies and cesspools. The water is within a few feet or yards of the surface in all parts of the town. The privy-places are never drained away, and there is no other way of escape, but either by evaporation or percolation into the water-bearing stratum, either of which processes must have an injurious effect upon the inhabitants of the vicinity. I should say certainly that a great part of the fluid refuse must escape down into the water-bearing stratum. I would give you an illustration of the conviction that such is the case. I am connected with a freehold land society here, but the estate is in Horninglow township, and we had to make a rule, with reference to what I have just stated, that no privy should be permitted to exist within 30 yards of any house. That is undoubtedly a great inconvenience to

persons who may be in delicate health, or during bad weather ; and it would be better if such conveniences could be safely placed nearer to the houses. They cannot, however, under the existing arrangements as to drainage, &c. We do occasionally suffer in consequence of our supplies of water being taken away by the great breweries. I have known this in many instances. Their wells are much deeper than others, and I should think that there has been more deepening of wells within the last two years than was ever known. Some are always dry, and all the shallow wells are soon pumped dry. This deepening of wells is of course attended with expense. The consumption of water in Burton is enormous, and no doubt the brewers would prefer having the water they now have, namely, from deep wells. If, therefore, the inhabitants were supplied with other water than well water, that would leave more of such water for the brewers.

“What I have stated as to disease, drainage, and water supply, is applicable generally to Burton, Burton Extra, and also to Horninglow.”

Although some of this evidence has reference to the water supply and drainage, I have quoted it here because the professional knowledge of the witness gives a peculiar value to his statements. Other evidence will be adduced, showing the pollution with night-soil, &c., of the wells from whence some of the inhabitants derive their only supplies of water for domestic purposes.

The following evidence from Mr. *William Wesley*, printer, was given at the Horninglow inquiry, for the purpose of showing that the Public Health Act was not required for that place. The inevitable conclusion, however, is, that the part of Burton-upon-Trent where he previously resided was comparatively very unhealthy. He said,—

“I carry on business in Burton, and resided there 15 years until about seven months ago, when in consequence of indifferent health in my family I took a house in the township of Horninglow, adjoining the town, and near the union workhouse. The neighbourhood is comparatively new. I and my family have had very good health since. I resided in High-street before, and have still a printing office there. The drainage in High-street is not very good, but better than when I first knew it. There is a yard very near, with some cottages, not conducive to health. The yard is very narrow, and the people not cleanly. There are no cesspools. The privy in that yard had an open pit, containing the night-soil and ashes. I considered the generally crowded state of the immediate vicinity of my house a cause of the bad health of my family. The water we had there was pretty good ; about the same as we have now. My present house is in a more open neighbourhood. The ventilation is better, and the air is purer. I do not know how the drainage is, but I suffer no inconvenience from it. Before we were always having the doctor, but since we removed we have had no sickness in the house.”

Table showing Excess of Mortality in BURTON EXTRA and HORNINGLOW.

Year.	Popula- tion.	Place.	Total number of deaths.	Total number of births.	Proportion of deaths to the population.	Proportion of births to the population.	Proportion of deaths of in- fants under one year to the births.	Proportion of deaths from zymotic diseases to the population.	Average age of all who have died.	Average age of all who have died above 20 years.	Proportion per cent. of deaths at each interval of death to the total deaths.												
		[Averages of Sixty-one whole registration districts in England and Wales]	16,063	28,280	1 in 62½	1 in 35	1 in 11	1 in 449	Yrs. Mo. 37 5	Yrs. Mo. 60 0	Under 1 year. 16·0	Under 5 years. 27·5	Under 15 years. 34·4	Under 20 years. 38·4	Between 20 and 30. 7·8	Between 30 and 40. 5·9	Between 40 and 50. 5·6	Between 50 and 60. 6·8	Between 60 and 70. 10·0	Between 70 and 80. 13·3	Between 80 and 90. 10·0	90 and upwards. 2·0	
1850	6,222		Burton-on-Trent.	121	233	51	26	7	580	29 4	54 6	25·7	38·8	44·6	49·5	7·4	6·6	7·4	4·9	9·8	11·5	2·4	0
1851	6,374			114	231	56	25	10	425	34 10	57 3	21·9	42·1	38·6	41·2	9·6	9·6	3·5	5·3	7·0	14·9	7·0	1·7
1852	6,525			146	262	44	24	5	632	26 9	54 3	31·5	46·5	52·0	52·7	8·8	6·1	7·5	2·7	7·5	7·5	6·8	0
	6,374	Averages.	127	248	50	25	7	579	30 5	55 3	26·7	40·4	45·6	48·2	8·6	7·3	6·2	4·2	8·1	11·0	5·5	·5	
1850	1,279	Burton Extra.	41	39	31	32	3	256	26 2	49 0	26·8	41·4	48·7	48·7	7·3	14·6	7·3	7·3	7·3	4·8	2·5	0	
1851	1,289		24	45	53	28	11	161	27 3	63 0	20·8	58·3	58·3	58·3	4·1	0	0	8·3	12·0	16·6	0	0	
1852	1,298		26	40	49	32	7	1,298	28 2	57 1	23·0	46·1	50·0	53·8	0	11·5	3·8	15·3	3·8	3·8	3·8	3·8	
	1,289.	Averages.	30½	41½	43	31	6	276	26 9	54 6	24·1	47·2	51·6	52·7	4·4	9·9	4·4	9·9	7·7	6·7	3·2	1·0	
1850	848	Horninglow.	16	25	55	33	4	282	24 11	42 9	25·0	35·0	43·7	43·7	18·7	12·4	0	18·7	0	6·2	0	0	
1851	852		11	18	77	47	11	882	28 3	63 4	9·0	18·1	36·3	45·5	0	9·0	0	9·0	18·0	9·0	9·0	0	
1852	855		24	13	35	65	23	1,222	48 5	69 1	3·5	16·6	29·1	33·3	4·1	0	8·3	0	16·6	16·6	16·6	4·1	
	852	Averages.	17	18½	50	45	9	255	38 10	60 4	11·7	23·4	35·3	39·2	7·8	5·8	3·9	7·8	11·6	11·6	9·9	1·9	



The first line in the foregoing Table shows the average rates of mortality in 61 whole registration districts in England and Wales, containing more than a million inhabitants. Many towns are included which are larger than Burton-upon-Trent, and where sanitary improvements are so much needed that the Public Health Act has been petitioned for. As a basis of comparison therefore, the figures can scarcely be objected to as being unfair to Burton.

I have included the township of Burton-upon-Trent for the purpose of comparing it with the townships under inquiry, and also with the standard at the top of the table.

I was aware that the return upon which the table has been calculated would cost Mr. Coxon considerable labour, or I should have extended the table over a longer period than three years. I am bound to confess that when the figures are confined to one locality, they are entitled to greater weight if extended over a longer period, and I shall therefore not attach undue weight to specific columns. It must be evident from a general glance at the averages that all the three places under review are much more unhealthy than the 61 districts at the head of the table; that the township of Burton-upon-Trent is more unhealthy than Horninglow; and that Burton Extra is more unhealthy than either.

Without more specific analysis I would direct attention to the four lines of averages, and to the columns, "proportion of deaths to the population;" "proportion of deaths of inf. under one year to the births;" and to the "proportion per cent. of deaths under 20 years to the total deaths." If those who are interested will carefully examine and consider how much is included in so large a waste of human life, further comment on my part will not be necessary.

I may state that if I had taken for comparison the registration district of Penkridge, with a population of nearly 20,000, in the same county as Burton, instead of the districts at the head of the table, the excessive mortality would have appeared much greater than it does.

Judging from much experience in such matters I cannot doubt that Burton-upon-Trent, including Burton Extra and Horninglow, is naturally an exceedingly healthy locality; there is very little dense population, and few of the casualties to which the inhabitants of large manufacturing districts are exposed; and yet the sanitary condition of the inhabitants, as shown by statistics, is only about equal to that of the whole county of Stafford, including Walsall, Wolverhampton, and the whole of the Pottery towns.

DRAINAGE, SEWERAGE, &c.—In addition to what is stated in the minutes of inspection, I shall only in this place quote the evidence brought before me at the inquiries.

Mr. *James Ordish*, an old inhabitant of Burton Extra, says in his evidence,—

“There is a sewer in every street and lane, and all through, with one exception. They are constructed of brick, and not more than a yard or a yard and a quarter deep. They are circular sewers. I do not know the sizes. There is a main sewer which runs through Burton Extra and through Burton-upon-Trent, and there is a stream of water through it every time the canal lock is used; but not through the branch sewers, only through that one. The other sewers have no water but what comes from the houses and the pumps. I do not know whether there is any deposit in the sewers now, because *they have all been opened through the parish since the flood* in December or January last. There *was* deposit in them. There might be half a wheelbarrow full across a road. Some of the grates were stopped up. There was no mud in them. I think none of the privies communicate with the sewers, nor do the house-sinks. In Park-street I have met with stench from the sewer after rain. I am not the surveyor of highways; Mr. Henry James Meakin is, and he will know better than me. The sewer in Park-street lies too low, and there is not sufficient fall. It belongs to Burton, but Burton Extra has to use it.”

Mr. *Meakin* was examined, and referred to the same sewer as follows:—

“I think the excess of deaths in Burton Extra is to some extent attributable to the bad condition of a sewer in Burton, but adjacent to Burton Extra.

“I think the drainage of Burton Extra is far from efficient, and requires to be improved, which might be done at a small expense. I have seen with you to-day the pumps, and their close contiguity to the drain, cess-pits, privy-holes, and other foul places. I am sure that such places want altering, and that we should do it under the Public Health Act.”

The following is the evidence of a practical man, but it was not volunteered:—

Mr. *George Keates* examined, said,—

“I have been 30 years a builder in Burton or Burton Extra. I have had some experience therefore in wells, and have made several of the town sewers. The sewers commence generally at the low-water level in the river Trent, and the depth is in some places as great as 11 feet. They have not more fall than an inch in 7 or 8 yards, and in some instances not so much. In High-street, Burton, and Anderstaff-lane, the sewer is deep enough to drain cellars, and I may say the same of part of Horninglow-street. In all the other parts they are not deep enough to drain cellars, and in some places the arch is not more than 20 inches below the



surface. They are all built of brick, and are barrel-drains, varying from 4 feet to 2 feet diameter. There are man-holes made to clean them out, and they are cleaned out by hand. In Bond-end and High-street the sewers are flushed out by the canal, but in all the other streets they are cleansed by hand. I have seen them being cleaned out, and quite full of black sludge. When they are cleaned out it is when they are full, and when the water cannot be got off at all. This requires doing regularly. In New-street I should think there were more than a hundred loads taken out the last time. I know because I drew it away to my own field. With the exceptions I have named, that is the general way in which they are cleansed. It is done by the day. The arch is broken up for about 6 feet, and the filth is then scooped out for about 10 or 12 feet. The work is all done by the day. I would not undertake to get it out and make all good for less than 1s. per yard running. It is worth another 6*d.* per load leading away, but it has a value as manure, and is given away to those who will take it out of the streets. There would be about a load to the yard. I think that sewer in New-street had been partially cleansed, but not thoroughly, for 8 or 10 years. New-street would be probably 500 yards long. It is a very disagreeable operation. The stench is very great while it is going on. Indeed, there is always a very foul stench comes up the grates in rainy weather, and even now. In part of High-street there are stench-traps to the grates, but in no other part of the town are there any. Houses drain into the sewers by culvert-tiles of about 7 inches diameter. They become choked when the sewers are full, and we take them up and cleanse them. That is an operation that I have often done. It would cost about 4*d.* per yard, and there would be an average of about 40 feet per house. I have emptied and cleansed my own house drain two or three times in 16 years."

Your Honourable Board will observe that this is only another instance to be added to the numerous descriptions which have been brought before you from all parts of the country of the common action—or rather inaction—of large sewers of deposit. It is the inevitable consequence of the system; the sewers are expected to accumulate filth; and it excites no general remarks of disgust or abhorrence from local authorities or the public, although the excessive mortality is attributed to its operation.

WATER SUPPLY.—Mr. *Ordish* said in his evidence,—

"I am one of the petitioners for this inquiry, and have lived in Burton Extra nearly 30 years. There are no waterworks in the town. The water lies in the ground near the surface; say from one to two yards deep, and is obtained by means of wells and pumps. These are generally outside the houses. The ground is full of water, and the neighbourhood is subject to floods, so that boats may be swum in the streets. I should say of the relative situations of the pumps and privies, that we have seen the

worst to-day. In the most respectable houses the pumps are generally farther away from the privies. The water is hard generally, but I do not know of water being bad except in localities where the drainage is bad. My tenants have sold water from a well that is soft, at two or three bucketfulls for a halfpenny. The sale of water is not very frequent, and that is only soft water."

Mr. *Keates*, the builder, gave some important evidence, showing the cost of water to the inhabitants under the present arrangements, as follows :—

"In many places there is either no sewer or no fall, and then cesspools are made, and these percolate away into the earth. I know some instances where they are pretty near the pumps. I have known many instances in which the water has become foul, and the owner or occupier of the premises has had to take the side of the well down and water-clay the back to prevent the privy nuisance from running in. The level of the water in the well is always lower than the privy-hole.

"Wells and pumps for cottages cost, the well 50s., not exceeding 9 feet deep, and pump 4*l.* 10s. to 5*l.* That would on the average serve 5 or 6 cottages. I should say that the average distance to the pump in such cases, going and returning, would be 14 or 15 yards. The repairs are generally paid for out of the sale of the ashes; but if there were no pumps to repair, the money would be put in the pockets of the occupiers of the houses. A pump used by 6 families would cost 5s. per annum repairs. Wooden buckets are used for fetching and carrying the water. They cost 3s. each unpainted; they will last 2 years without paint. Very few cottages have more than one bucket. Many cottage houses have underground cisterns for soft water. For 6 cottages the cistern would cost 10*l.* and the pump 3*l.* The cistern would want cleaning out every year, and would cost 2s. 6*d.* The repairs of the soft water pumps are often greater than of the hard water, but you may take them at the same. All cottages have not got these cisterns. Those who can afford it have tubs, and some two, and more than that. The poor people get fifty-fours at 2s. 6*d.* each. They are what are called "stinkers." They are some time before they become sweet. They are not used for water intended for food. If they are not exposed to the sun they will last 7 years, but if exposed they will not last more than 3 or 4 years. These are the cheapest kind of soft water tub. The rum puncheon costs 6s. A few are set on bricks and have taps. Most are without covers, but the setting up and taps would cost about 4s. The oil pipes are much used by the more respectable people, and cost about 12s. They are often set in the back kitchen or wash-house, and the taps and fixing cost 4s. These would last 10 years. The oil easks, when set in-doors, are generally painted, at a cost of about 1s. 6*d.* The people would go for water on the average about seven times a day, and *must* go, when water is wanted, in all weathers. That would make at least half a mile per week, besides the time occupied in pumping, and it is quite certain that it could not be done for so little as one penny.



“The middle-class houses would generally have a well and pump each, which would cost rather more than those of the cottages. The well would cost at least 3*l.* and the pump 5*l.* 10*s.* The pump would be painted and kept in better repair than those of the cottages. Painting would amount to 2*s.* 6*d.* every two years, and repairs to 5*s.* or 6*s.* per year. There are about as many in this class of houses as there are outside. Buckets would cost about the same as those of the cottages.

“Soft water for these better houses is obtained by tubs or cisterns, but the cisterns are not in the ground always, but are sometimes elevated. Each house would have its own accommodation. A ground cistern would cost 6*l.*, and pump about 3*l.* more. Cleansing and repairs would be as before, but the pump not quite so much used. The elevated cistern of slate would cost by contract 6*l.* each complete, containing 300 gallons. There is cleansing to add, about 1*s.* per annum. Second-class houses having tubs will generally have two for soft water. They will be two oil pipes, of the price named before, 12*s.* or 13*s.*; tap and fixing about 8*s.*, and they would last 8 or 10 years. Sometimes they are in the houses and sometimes not.

“The large houses have pumps and wells, costing for the well 4*l.* and pump 6*l.*, because the wells are deeper. Repairs would be about the same as the middle class. These are chiefly in the houses. They have either lead cisterns or brick tanks. The brick tank would cost 8*l.* or 9*l.*, and pump 4*l.* There would be repairs of pump as before. The tank would hold about 600 gallons. The lead cistern 6 feet square and 1½ feet deep, would cost about 6*l.* Downpipe and tap would cost about 1*l.* more. Repairs and bucket as before. For this class of houses there is generally a force-pump and a cistern over a water-closet. The water-closet cistern would cost 4*l.* to 5*l.* complete, and the force-pump about 8*l.* Where there are baths or supply to dressing-rooms, there would be additional expense. That would be the best water supply that could be had for money under the present arrangements in Burton, Burton Extra, or Horninglow.

“Soft water is sold *commonly* here at the price of three buckets for a penny. That will be the case next week if there should be no rain. People will be there at 4 or 5 o’clock in the morning, and until 10 at night, waiting for turns at Mr. Ordish’s well, and they will even ladle it out with a tea-saucer. I know four or five places in the town where soft water is regularly sold. Some of the people would have to fetch it a quarter of a mile, besides waiting and paying for it.

“Having heard my evidence read over, there is nothing I would wish to add or alter.”

Mr. *Samuel Fletcher* examined, said,—

“I am a plumber, residing in Burton Extra, where I have carried on business about nine years, and have had considerable experience in matters connected with supplies of water, but not with drainage.

“I have heard Mr. Keates’s evidence, and I consider it to be

quite right and just ; and as far as my experience goes I can fully corroborate what he has stated."

From the above evidence it will be easy to draw out approximatively the cost of water to the inhabitants, and to show that, as a financial consideration only, the efforts of private individuals will not bear comparison with the cost of proper supplies from public works. The following estimates are not put forward as being strictly applicable in all cases, but it will be found that they are strictly derived from the evidence, and it cannot be doubted that they are generally correct.

The first is for the large houses, and in the words of the witnesses, is "for the best water supply that could be had for money under the present arrangements."

If those who can afford it, incur so large an expenditure for one of the necessities of life, the smaller sums paid by their poorer neighbours serve to some extent as a measure of the deprivation under which they suffer. With proper works the poor as well as the rich would have constant supplies of water by turning a tap.

#### 1ST CLASS. COST OF WATER.

	£	s.	d.
Annual interest on 10 <i>l.</i> , first cost of well and pump	-	0	10 0
Annual repairs and painting - - - -	-	0	6 3
Annual interest on 12 <i>l.</i> 10 <i>s.</i> , first cost of brick tank and pump - - - - -	-	0	12 6
Annual repairs and cleansing - - - -	-	0	6 6
Annual interest and dilapidation of bucket -	-	0	1 7
Annual interest on closet, cistern, and force-pump -	-	0	12 6
		<u>£2</u>	<u>9 4</u>

This amount is equal to about 11½*d.* per house per week.

The second statement includes the middle-class houses, and it will be seen that I have not taken the most expensive apparatus for soft water, indicated in the evidence.

#### 2D CLASS. COST OF WATER.

	£	s.	d.
Annual interest on 8 <i>l.</i> 10 <i>s.</i> , first cost of well and pump	0	8	6
Annual repairs and painting - - - -	-	0	6 3
Annual interest on 6 <i>l.</i> , first cost of elevated cistern -	-	0	6 0
Annual cleansing of same - - - -	-	0	1 0
Annual interest and dilapidation of bucket -	-	0	1 7
		<u>£1</u>	<u>3 4</u>

This amount is equal to about 5½*d.* per house per week.

The third statement is for cottage houses, who are supposed to have an external well and pump for hard water, and a cistern and pump for soft water; the apparatus being common to six cottages. In this estimate the poor have to fetch, pump, and carry the whole of the water for their families, in all states of the weather, and at all seasons of the year. An allowance, proved by the evidence to be very moderate, is made for this.

## 3D CLASS. COST OF WATER.

	£	s.	d.
One sixth annual interest on first cost of well and pump - - - - -	0	1	2
One sixth annual repairs of same - - - - -	0	0	10
One sixth annual interest on first cost of cistern and pump - - - - -	0	2	2
One sixth annual repairs and cleansing - - - - -	0	1	3
Annual interest and dilapidation of bucket - - - - -	0	1	7
Fetching, pumping, and carrying water, at only 1d. per week - - - - -	0	4	4
	<hr/>		
	£0	11	4
	<hr/>		

This amount is equal to about  $2\frac{5}{8}d.$  per house per week.

Or, supposing a cottager to store soft water in a good cask because his landlord had provided no cistern, the account would stand as follows:—

## 3D CLASS. COST OF WATER.

	£	s.	d.
Annual for well and pump, as before - - - - -	0	2	0
Annual for bucket, as before - - - - -	0	1	7
Annual for fetching and carrying water, as before - - - - -	0	4	4
Annual interest and dilapidation of oil cask for soft water - - - - -	0	3	6
	<hr/>		
	£0	11	5
	<hr/>		

Equal to  $2\frac{5}{8}d.$  per house per week, as before.

I need not inform your Honourable Board that in Reading, Norwich, and other places, there are public companies, having to make dividends, who are restricted from charging cottages more than *one penny* per week each for constant supplies of pure water. In very many towns under the Public Health Act the charge does not exceed one penny, and in some instances is less. The case of the Staffordshire Potteries Waterworks Company, during the present ses-



sion of Parliament, should have weight with the inhabitants of Burton and the townships under inquiry, because the district is in their own county. After hearing evidence, and a full consideration, the Committee of the House of Commons decided that the charge for water constantly on, *including the supply for a water-closet apparatus*, should not exceed six shillings per annum for a cottage house.

I am fully warranted therefore in stating that the cottages in Burton, including Burton Extra and Horninglow, might have an unlimited supply of pure water for about one half the actual sums which they now pay for an inadequate quantity of water, often impure, and procured with great inconvenience.

In these remarks I have not adverted to the sale of water,—in itself a demonstration of the present defective arrangements,—nor to the frequent pollution of the wells by percolations from privies, drains, &c., the evidence of which cannot be disputed by any one who has paid attention to the subject or examined their relative positions.

The cost of deepening the wells was alluded to in his evidence by Mr. Greaves, the surgeon; and he stated that this was caused by the great depth of the wells sunk for brewing purposes. I have taken no account of this burden in estimating the cost of water to the inhabitants. It appears that the excellent quality of the Burton beer is attributed to a great extent to the peculiar qualities of the well water from which it is made; and therefore, the suggestion that if the inhabitants were supplied by means of public works there would be more of this peculiar water for the brewers, deserves their serious consideration. The brewers are among the most wealthy and influential inhabitants, and Mr. Greaves says their consumption of water is enormous. The buildings connected with their trade are rapidly extending, while the supply of water from the subsoil is not capable of increase without withdrawing it from domestic purposes, and it would seem therefore that the construction of public works for the proper supply of the houses would be a great advantage to all classes.

STATE OF HIGHWAYS.—I have endeavoured as far as possible to keep the evidence respecting the “Burton Improvement Bill” distinct from that on the other topics of my report. With reference to the highways, however, I am unable to do so. Mr. *H. J. Meakin* said,—

“This is my second year of office as surveyor of highways in the township of Burton Extra. The highway rate last year was  $1\frac{1}{2}d.$  in the pound, but there was a balance of 10*l.* from the pre-

vious year. A rate of  $1\frac{1}{2}d.$  will make 32*l.* The expenditure and income of last year was 40*l.* The length of public road that the township is liable to repair is about  $1\frac{1}{2}$  miles. If the Burton Improvement Bill, in its present form, should pass, I estimate that the highways in Burton Extra would cost 200*l.* per annum. That would be caused by two turnpike roads becoming chargeable to the township. The rate for buildings would be about 1*s.* 6*d.*, and for the land only one fourth that amount.

“ Besides this, only part of the township would be included in the limits of the Improvement Act, and the land beyond would be freed from the rates to which it has been liable from time immemorial. I should have 110 acres of land in Burton Extra beyond the limits, and should be benefited almost equally in Horninglow by land, for which I should pay no highway rate, although I have always paid such rates heretofore. I am convinced, however, that such an arrangement would be unjust to others who would be within the district, and would have to pay more than they now pay.

“ I presume that the consideration for throwing upon part of Burton Extra, and part of Horninglow, this obligation is the removal of the toll-bars beyond the district. The persons principally using those roads, and now paying the tolls, are the promoters of the Bill.”

At Horninglow, Mr. *Samuel Turner*, the surveyor of the highways, produced the account of the last year, showing a receipt of 53*l.* 16*s.* 11 $\frac{1}{2}d.$ , and an expenditure of 52*l.* 3*s.* 8*d.* The total length of roads he said was 12 miles, but the return to the justices stated the length of the public highways to be  $8\frac{3}{4}$  miles. About  $2\frac{1}{2}$  miles were repaired during the year with 83 loads of gravel and 70 loads of broken stone. He said,—

“ The 12 miles of road I spoke of include  $3\frac{1}{4}$  miles not generally repaired by the inhabitants, and some of them are ploughed up. In addition to the above there are three turnpike roads, comprising together  $3\frac{1}{2}$  miles, or more, repaired by the respective trustees.

“ If the Burton Improvement Bill should pass, about 500 yards of the turnpike road would be within the limits of the Improvement Act, and the other 3 miles would remain as it is. I have never inquired what that turnpike, namely, the Burton, Ashby, and Tutbury road, costs per mile, and do not know.

“ There are two toll-bars on the same road between Burton and Horninglow village. It is proposed that one of these bars within the limits of the Bill shall be removed. The payment of one toll frees both bars, and the charge is 3*d.* for carriages having tires 6 inches broad or above, and  $4\frac{1}{2}d.$  for tires under 6 inches.

“ I do not know the amount for which the tolls are let, and consequently I do not know what the relief from that bar will amount to. It will be no relief to persons travelling beyond the canal. The advantage will be to the inhabitants of Burton, and to the Canal Company. The part so included will be repaired by the portion of the township of Horninglow within the Act.”



The highways in both townships are capable of considerable improvement. The footways are some of them paved with brick; the court-yards are generally unpaved.

EVIDENCE AS TO THE BURTON IMPROVEMENT BILL.—Although the Burton Improvement Bill has now passed into a law, I do not feel at liberty to suppress the evidence given respecting it; especially when, as your Honourable Board will perceive, its provisions must materially affect the condition of Burton Extra and Horninglow for the future. Mr. *H. J. Meakin* said, in addition to the evidence which I have already given,—

“The only promoters of the Burton Improvement Bill amongst the ratepayers of Burton Extra are persons having a much larger interest in Burton-on-Trent. Under the Act the Commissioners for Burton Extra will be utterly powerless, and cannot control or enforce any expenditure in their own district, however necessary, in consequence of the excess of Commissioners for the district of Burton-on-Trent (who have 18 members to Burton Extra 6) having the power to annul the same, although sanctioned by every ratepayer of Burton Extra.

“I think, therefore, that the passing of that Bill would be highly objectionable so far as the township of Burton Extra is concerned. I have no wish to prevent Burton-upon-Trent from getting additional powers; but if the Bill is to be passed, with any powers affecting the townships of Burton Extra and Horninglow, it is essentially necessary for us that there should be a clause inserted incorporating the Public Health Act with it. Burton Extra and Horninglow being the weaker parties, and always in the minority, it is necessary that we should have a disinterested body, like the General Board of Health, to whom we might always appeal in any case of injustice or oppression.

“My opinion is, that if the Public Health Act be conceded to Burton Extra, the Local Board will adopt all necessary measures likely to benefit and promote the health of the inhabitants.”

Mr. Meakin added the last clause to his evidence in consequence of a remark in the room that the only object of the petitioners was to oppose the Bill, and that if they succeeded, the Public Health Act would be a dead letter.

Mr. *James Ordish* said,—

“The Improvement Bill would be very injurious to Burton Extra. I think the Commissioners would pay greater attention to Burton than to Burton Extra. We should always be in a minority. We should have about a mile and three quarters of turnpike roads thrown upon us, which would cost 100*l.* per annum to keep in repair. I think the purchase of the gas-works would be injurious. The clause as to rating would be very unjust, because ours is about 3½*d.* in the pound for highways and lighting, while the Burton rates are much higher. I think it would amount to 2*s.* with the lighting. As the Bill now stands we should be rateable to the extent of 2*s.* 6*d.*; in fact, if the

Commissioners had no power to make a difference we should be rated as high as Burton ; and if they had, we might be rated even higher than Burton, because they would always have a majority.

“ I approve of the Public Health Act in preference to this Bill. We might probably have remained quiet for some time if the Bill had not been threatened ; but we would much sooner have the Public Health Act than the Bill.”

Mr. *Greaves*, the surgeon, said in his evidence,—

“ I know generally the nature of the proposed Bill, and do not consider it in reality a sanitary measure. The promoters consider the present drainage perfect, and ask for no powers to give a proper water supply ; they have excluded the Public Health Act, and I have no hesitation in saying that one of their chief objects is to facilitate the conveyance to and fro of the matters connected with the trade of brewing. To that I do not object, but would rather give every assistance in my power to anything that would equitably promote the good of the town ; but I am of opinion that something more is required for the sanitary improvement of the district ; and I think the incorporation of the Public Health Act with the Bill is necessary for the general good of the district and especially for the protection of Burton Extra and Horninglow as the weaker parties against any injustice in its practical operation.”

*John Thornevill*, Esq., of Burton Extra, solicitor, put in the following statement in writing :—

“ That he dissents from the application of the powers of the Board of Health Act to the township of Burton Extra.

“ That he is now employed jointly with Mr. Abraham Bass in carrying a Bill through Parliament which will give to the Commissioners named therein all the powers which can be conferred upon a Local Board of Health.

“ That five of the Commissioners named in the Bill are inhabitants and ratepayers of Burton Extra, and five others are ratepayers or owners of property, though not inhabitants, the total number being twenty-seven.

“ That the Bill extends its operations to Burton Extra, and is supported by several of the largest ratepayers and most influential inhabitants of the township.

“ That the two townships of Burton-upon-Trent and Burton Extra are so intermixed in local juxtaposition, the ownership and occupation of property, and the necessary direction of the sewers, as to offer serious difficulties to any system of separate management.

“ That one governing body can always carry on the local arrangements and management of a community more economically and effectually than several.

“ That it is well known to be the fact that the application made by a large majority of the ratepayers of the township of Burton Extra to the Board of Health, was made only in opposition to the ‘ Burton Improvement Bill,’ and not from any desire to adopt the



provisions of the Board of Health Act, and that these parties hope, by constituting a Local Board who will sit still and do nothing, to escape all the expenditure which the sanitary regulations mentioned in the proposed Bill would render necessary, but have no intention of carrying out the admirable regulations pointed out in the Public Health Act.

“That the proposed ‘Burton-upon-Trent Improvement Act’ incorporates the following existing Acts of Parliament ; viz. —

“The Lands Clauses Act, 1845 ;

“The Towns Improvement Act, 1847 ;

“The Towns Police Act, 1847 ;

“The Towns Commissioners Act, 1847 ;

“The Markets and Fairs Act, 1847 ; and

“The Gasworks Clauses Act, 1847.

“That the clauses contained in the above Acts appear to the witness amply sufficient for all sanitary purposes ; whilst the extended powers they give to the Local Commissioners will enable that body much more effectually to promote the social well-being of the community, included in the Bill, than would the more restricted powers of the Board of Health Act and its regulations.

(Signed) “JOHN THORNEWILL.”

I thought it right to ask Mr. *Thornewill* a few questions in explanation of his written evidence, when he stated as follows :—

“I think we shall obtain through the Towns Improvement Clauses Act all the powers which the Public Health Act could give us with reference to drainage, sewerage, &c., and jurisdiction over the condition of the drains, pavements, &c., on private property. With respect to water supply, I refer to the same Act. In my opinion the powers will be as great for water supply and improvements of private property, and can be exercised as equitably as under the Public Health Act. That opinion is guided by local peculiarities. Those local peculiarities are particularly the accessibility of water. I cannot repeat the clauses, but as to private improvements, I refer to the Act itself. The Lodging Houses Act is in operation here, and inspectors are appointed by the magistrates. In one of the incorporated Acts there is full power to bring the lodging-houses under the jurisdiction of the Commissioners. Slaughter-houses and injurious trades the same. Burial grounds also.

“All of the large ratepayers of Burton Extra referred to as supporters of the Bill are within the taxing area of the Bill, except Mr. Gretton, part of whose farm is beyond. I refer to him and to Robert John Peel, Esq., Mr. Lander, the agent of the Marquis of Anglesea, Robert Thornewill of the Abbey, and Messrs. Allsop and Co. I think they are all interested in Burton-upon-Trent also. Taking them altogether, however, their interests would be larger in Burton than in Burton Extra. The effect of this Bill would no doubt be to increase the rates in Burton Extra. I am of opinion that under the Bill as now before the House, of which this is a copy, no mode of rating could be



adopted which could press unjustly upon the two smaller wards. My reason for the opinion that a Local Board in Burton Extra would 'sit still and do nothing,' is derived from information given to me. I would decline to name my informants. With respect to the last statement, my opinion as to the Public Health Act being incorporated with the Bill is, that it could not add to the efficiency of the Bill, whilst it might clog its action; that a local body is best adapted to manage the affairs of its own community, from acquaintance with its local wants and peculiarities, and that it would work better without the responsibility to, or influence of, any other body existing at a distance."

At the time of the inquiry I had not with me copies of the general Acts of Parliament incorporated in the Bill, but I have since examined such Acts, and I find that in several respects the powers given by the Public Health Act as to private improvements, are greater than those in the incorporated Acts.

With respect to the powers for water supply, referred to in Mr. Thornewill's supplementary evidence, I would refer your Honourable Board to the Towns Improvement Clauses Act, 10 & 11 Vict. c. 34, ss. 121 to 124, containing the only powers as to water supply in any of the incorporated Acts. The Commissioners are there empowered to maintain or provide "public cisterns, pumps, wells, or conduits." The terms used sufficiently show that power to construct waterworks for the supply of the whole population by pipes and taps is not intended. If there were any doubt on the subject it would be removed by the fact that such cisterns, pumps, &c. are confined to water gratuitously supplied.

There is no power to make any charge, or to levy a water rate, and this inability on the part of the Commissioners must effectually preclude the construction of any waterworks capable of giving such a supply as the Public Health Act declares to be alone PROPER; namely, pure and wholesome pipe water, constantly on, at such pressure as will carry it to the top story of the highest dwelling-house supplied, and at a price not exceeding twopence per week per house.

**BURIAL GROUNDS.**—There are no burial grounds either in the township of Burton Extra, or the township of Horninglow. The dead are buried in Burton-upon-Trent.

**NATURAL DRAINAGE AREAS.**—The natural drainage of Burton Extra is wholly to the river Trent, and a great part of such drainage passes through the township of Burton-upon-Trent. A large portion of the township of Horninglow drains also directly to the Trent on the north

side of Burton. Beyond the village of Horninglow a valley containing five or six hundred acres, and only a few farm-houses, drains towards the village of Stretton, about three miles north of the town. Still further westward a small and uninhabited portion of Horninglow township drains through the village of Rolleston, and into the river Dove.

EXISTING LOCAL BOUNDARIES.—I have had considerable difficulty in ascertaining the local boundaries. There is no public survey or plans accessible for the purpose. I am indebted to Mr. H. Whitehead for having marked the boundaries as accurately as he could upon the small scale ordnance map; and the accompanying enlarged plan may be taken as showing such boundaries approximatively, and also showing the limits of the "Burton Improvement Act, 1853."

BOUNDARIES WHICH MAY BE MOST ADVANTAGEOUSLY ADOPTED FOR THE PURPOSES OF THE PUBLIC HEALTH ACT.—I have given much consideration to this part of the subject. Upon it depends the efficiency or otherwise of any improvements that may be desirable. It has been shown that the drainage and water supply both of Burton Extra and of Horninglow are very defective; but these defects exist also in Burton-upon-Trent, and I cannot see that either of the three townships can be improved irrespective of the other. The Burton Improvement Act contains powers for drainage; but, as I have shown, no powers by which proper waterworks can be constructed. Such powers would be conferred by the application of the Public Health Act, but I do not think that the townships of Burton Extra and Horninglow, either jointly or separately, could construct or maintain such waterworks irrespective of Burton-upon-Trent.

Except for a short distance along the river Trent, the two townships of Burton Extra and Horninglow surround the township of Burton-upon-Trent, so that the application of the Public Health Act to them would constitute the anomaly of two places, with comparatively small populations, having the powers and provisions of an Act of Parliament which was intended mainly for "towns and populous places;" while the town which they enclosed was left without such provisions.

Under these circumstances I am of opinion that the boundaries of the township of Burton Extra are not those which might be most advantageously adopted for the purposes of the Public Health Act. I am of the same opinion



as to the boundaries of the township of Horninglow ; and also as to the boundaries of the two places united.

The boundaries of the local Act lately passed, with such an extension as would include the village of Horninglow, are such as I believe would be most advantageous for sanitary purposes ; but inasmuch as no petition for the application of the Act has been presented by the township of Burton-upon-Trent, I cannot recommend that your Honourable Board should apply the Act either to the township of Burton Extra, or to the township of Horninglow.

I append a copy of a memorial against the application of the Act to Horninglow, signed by a considerable majority of the ratepayers of the township. Also a copy of a memorial from the Poor Law guardians to the same effect. The union workhouse is situate in the township of Horninglow.

### CONCLUSIONS.

The following are the conclusions to which I have come upon these two several inquiries, and which I beg to lay before your Honourable Board.

1. That the sickness and mortality of the townships of Burton Extra and Horninglow is excessive ; and is due to the same causes as are in operation in Burton-upon-Trent.

2. That the fevers and other zymotic diseases to which all the three places constituting the town of Burton are liable, are to a great extent preventible.

3. That incidental to the trade avocations of a large proportion of the adult male population, habits have been induced which are calculated to increase the sickness and mortality of the inhabitants, irrespective of such evils as might be remedied by the provisions of the Public Health Act.

4. That the water supply and drainage, the condition of the court-yards, the ventilation, the state of the privies, and their relative position to the water wells, are all very defective and objectionable, and are among the causes of the excessive disease.

5. That there are no burial grounds either in Burton Extra or in Horninglow, but that the dead of these townships are buried in Burton-upon-Trent.

6. That the Burton Improvement Act, recently passed, contains many important provisions not conferred by the Public Health Act ; but that some of the essential provisions of the latter, especially that of a proper water



supply, which is the foundation of all sanitary improvement, are omitted.

7. That the densely populated parts of the townships of Burton Extra and Horninglow constitute integral parts of the town of Burton.

8. That the populations of the townships of Burton Extra and Horninglow are small, and the necessary works of water supply, &c. cannot be effected in them, independently of the township of Burton-upon-Trent.

9. That the boundaries of the townships of Burton Extra and Horninglow, separate or united, are not those which may be most advantageously adopted for the purposes of the Public Health Act.

10. That the boundaries of the Burton Improvement Act, 1853, with such an extension as would include the village of Horninglow, would be the most suitable for the purposes of the Public Health Act.

11. That, for the above reasons, it is not expedient to apply the Public Health Act either to the township of Burton Extra or to the township of Horninglow, unless the Act were also applied to Burton-upon-Trent, so as to constitute of the whole one district.

I have the honour to be,

My Lords and Gentlemen,

Your very obedient servant,

WILLIAM LEE,

*Superintending Inspector.*

*The General Board of Health,*

*&c.      &c.      &c.*

## APPENDIX.

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### TO THE GENERAL BOARD OF HEALTH.

WE, the undersigned, owners of property, ratepayers, and inhabitants of the township of Horninglow, in the county of Stafford, have learnt with regret that your Honourable Board are about to send down an Inspector, to make public inquiry and examine witnesses as to its sanitary condition, with a view to the adoption of the Public Health Act.

We beg most respectfully to submit our objections to the adoption of the Public Health Act on the following grounds, viz. :—

That Horninglow consists of about 2,167 acres, amounting, in rateable value, to about 6,138*l.* 0*s.* 6*d.*; that the population is small, amounting to about 674 persons (exclusive of the inmates of the Burton District Union Workhouse, which in the census of 1851 appeared to be 183), and therefore we submit, that Horninglow cannot be said to come under the denomination of “towns or populous places.”

That the population, principally consisting of persons engaged in agriculture, is much scattered, and not congregated in close alleys or narrow courts; the supply of good water is ample, and there is every facility for good drainage; that in that part of the village where the population is most concentrated, the situation is elevated and healthy.

That any complaint as to nuisances has been readily met and the nuisance removed, under the provisions of the Nuisances Removal Acts, and we are of opinion, that the powers contained in them are sufficient for every required purpose in the village of Horninglow.

We therefore respectfully submit, that the circumstances are not such as to warrant an application of the Public Health Act to the township of Horninglow, which would bring a heavy expense upon us without any corresponding public advantage; and we pray that your Honourable Board will not cause the Public Health Act to be adopted in the township of Horninglow.

(Signed)      JOHN ELLIS, Chairman.  
(and 156 others.)

*Horninglow, 6th May 1853.*

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### TO THE GENERAL BOARD OF HEALTH.

MY LORDS AND GENTLEMEN,

The Guardians of the Poor of the Burton-upon-Trent Union, in the counties of Stafford and Derby, having heard with regret that steps are about to be taken for placing the township of

Horninglow, in which their union workhouse is situated, under the provisions of the "Public Health Act," most respectfully beg to express their opinion to the General Board of Health, that such a proceeding is altogether uncalled-for and unnecessary; that the union workhouse is very healthy; that the township of Horninglow had a population of only 815 at the census of 1851, 141 of which were then in the union workhouse; that the remaining 674 were scattered over a wide area, or divided into small isolated portions at a considerable distance from each other; that the village of Horninglow, which contained only 399 inhabitants, stands on an elevated and healthy position, about one mile from the union workhouse; that the "Nuisances Removal Acts" and the 50th clause of the "Public Health Act" are quite sufficient to effect any sanitary measures which may be required in the said township of Horninglow.

The Guardians therefore humbly pray, that the "Public Health Act" may not be applied to the said township of Horninglow.

The common seal of the Guardians of the said Union was hereto affixed at a meeting of the said Board of Guardians this 19th day of May 1853.

(Signed)	W. WORTHINGTON, Chairman. (L. s.)
(Countersigned)	WM. COXON, Clerk to the said Board of Guardians.



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